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## ABSTRACT

As a preparation process, a gas supply source 10A supplies WF<sub>6</sub> gas for restricting formation of nuclei for growing a metal film onto a surface of a process target semiconductor wafer W for a predetermined period of time. After the 5 preparation process is performed, the gas supply source 10A and a gas supply source 10B respectively supply WF<sub>6</sub> gas and NH<sub>3</sub> gas onto the surface of the semiconductor wafer W to which the preparation process has been applied, for a predetermined period of time. Thus, a tungsten nitride film which is a metal compound film whose surface has bumps is formed on the semiconductor wafer W. 10 A controller 51 controls operations of the gas supply sources 10A and 10B, and the like in accordance with a program or the like previously provided.

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